

JORDAN VALLEY WATER CONSERVANCY DISTRICT

DRAFT

Proposed Deep Groundwater Development and Water Rights Allocation Plan

February 14, 2001

I. BACKGROUND

A. General

The Jordan Valley Water Conservancy District (JVWCD) holds several water rights for underground water in the deep, principal aquifer of Salt Lake Valley. These rights are of early priority dates. Many of these rights have been developed and perfected. Some additional development of these rights is planned.

This document is intended to provide a comprehensive plan to the State Engineer for the ultimate development of JVWCD deep groundwater rights. This is not intended to serve as an official application which would require any official action by the State Engineer. Instead, it is intended to provide a comprehensive plan and blueprint for development of the remaining undeveloped JVWCD groundwater rights. As such, it can serve to place each future change application by JVWCD into context in a larger plan. JVWCD hopes that this will assist the State Engineer during his consideration of future JVWCD change applications.

B. JVWCD Groundwater Withdrawals

JVWCD has a portfolio of many water supplies. Salt Lake Valley principal aquifer groundwater is one component of that plan. As a result of JVWCD planning for the conjunctive use of its water sources, groundwater withdrawals have been identified for use mainly as peaking capacity sources. Because the highest water demands in JVWCD's municipal and industrial (M & I) water delivery system occur in July and August, aquifer withdrawals by means of deep wells will occur mainly during this period.

Figure 1 shows the previous 19 years history of groundwater withdrawals by JVWCD. Note that the withdrawals are most directly impacted by wet and dry weather cycles. The 19 year average annual withdrawal has been 11,600 acre feet. JVWCD planning indicates that the duration of pumping for future production wells will generally range from 45 days to 5 days in average years. Some brackish wells which will pump to demineralization plants would operate longer.

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C. 1960 Memorandum Decision

Some of the JVWCD groundwater rights were approved in the late 1950's. Most of the JVWCD groundwater rights were approved on March 11, 1960, by means of a memorandum decision that was common to all of the rights. This memorandum decision also acknowledged the previous approvals in the late 1950's.

Attached is a typical copy of the 1960 memorandum decision. Table 1 summarizes the water rights that were approved by means of this "form" memorandum decision. Note that 29 individual appropriation application numbers were approved, with a total flow rate capacity of 240 cfs. However, the memorandum decision placed a limit of 125 cfs at any one time on this group of underground water rights. The total number of points of diversion in the 29 applications was 43, as shown in Table 1.

The State Engineer has approved many segregations and change applications pertaining to the 29 underground water applications listed in Table 1 since 1960. More recently, the State Engineer is attempting to observe the limitations included in the 1960 memorandum decision more closely in JVWCD change applications. The plan in this document provides a proposal to the State Engineer to aid in accomplishing that intent.

D. Status of Well Development

Table 2 provides a status of the 29 underground water applications approved in the 1960 memorandum decision. Note that 27 wells have been constructed to date.

Table 2 also provides details on portions of the 29 underground water applications that have been transferred to other municipal agencies. Each of these agencies is a member agency of JVWCD. A total of 19.38 cfs from these rights has been transferred to other municipal agencies. Of this amount, 14.33 cfs has been certificated.

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II. PROPOSED PLAN

A. Flow Rate Per Application

The 1960 memorandum decision placed a restriction that the individual flow rate approved for each one of the 29 individual applications not be exceeded. JVVCD has honored this restriction in every case, and intends to continue honoring it.

B. 125 cfs Flow Rate Limit

JVVCD intends to observe the 1960 memorandum decision limitation to not "divert more than 125 cfs at any one time". The portions of the 29 applications that have been transferred by JVVCD to other municipal agencies will be subtracted from the 125 cfs flow limit, as follows:

- 14.33 cfs has now been certificated. This flow rate amount will be subtracted from 125 cfs.
- Riverton City has 10 cfs of transferred rights of which 5.0 cfs has been certificated. Riverton should not perfect more than the following portion of their 10-cfs right:

$$125 \text{ cfs} \div 247 \text{ cfs} \times 10 \text{ cfs} = 5.06 \text{ cfs}$$

- This will result in 14.39 cfs of transferred, certificated water rights, subtracted from 125 cfs.

The remaining portion of the 125 cfs flow limit will be 110.61 cfs. This will be the flow rate limit for JVVCD water rights.

JVVCD experiences unforeseen mechanical and electrical well equipment failures each pumping season. The failure rate generally ranges from 20 percent to 30 percent of the total JVVCD well capacity. Therefore, JVVCD intends to construct wells and to certificate rights with a combined flow rate greater than 110.61 cfs. This will allow JVVCD to pump up to 110.61 cfs at any one time from its operable wells in any given summer season.

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C. Number of Wells

1. Transferred Rights

The transfer of portions of JVWCD rights to its member agencies has been a service to its member agencies. Table 1 shows that the State Engineer has not observed 1960 memorandum decision limits on number of wells in approving some change applications for multiple wells for these rights. JVWCD proposes that these transferred rights and wells not be included in an overall limitation on number of wells to be counted against the remaining JVWCD rights.

2. JVWCD Wells

The 1960 Memorandum decision approved a limit of 43 points of diversion among the 29 underground water rights, as shown in Table 1. JVWCD proposes that this limit of 43 wells be observed as a constraint for its ultimate water rights development plan. Figure 2 is a map which shows the location of existing and proposed wells. The proposed future well locations are general in nature, and may require fine tuning in the future, as lands are purchased.

Table 3 shows the details of the ultimate JVWCD groundwater development plan. It lists each of the 43 well locations, and shows approved and proposed change applications from among the original 29 underground water right applications to accomplish it.

The 43 wells shown in Table 3 are considered to be 43 "equivalent points of diversion" in some cases. Those cases are described in the following topics E, F and G.

D. 8200 South 1300 East Replacement Well

JVWCD owns a well, under Water Right 57-7405, at 8200 South 1300 East. This well has continually pumped significant amounts of sand, and requires

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replacement. JVWCD attempted to drill a replacement well on its well site. However, the removal of sand from pumping created voids in the aquifer and contributed to a collapse at the drilling site. The attempted replacement well was grouted in and abandoned.

The replacement well needs to be drilled at least 150 feet from the existing well site. However, all surrounding lands are developed and are not zoned appropriately to allow a replacement well.

JVWCD is considering the purchase or condemnation of a home on the east side of 1300 East Street to drill a replacement well. However, this is in a location of significant pumping and regional drawdowns in the Sandy area. Attached as Figures 3, 4, 5 and 6 are maps showing the principal aquifer potentiometric surface during the months of March, May, August and November of 2000, as measured by JVWCD.

Because of this locally heavy pumping, JVWCD is prepared to submit a change application to move this water right to a location at about 1650 East 7200 South. This location is shown on Figure 2 as proposed point of diversion number 23. Although this lies within a section that has been designated in your proposed final groundwater management plan as a restricted management square, there are fewer water rights in this section than in the existing water right location. In addition, there are no groundwater right owners in the proposed new section other than JVWCD. JVWCD believes that this will allow for distributing withdrawal locations away from the center of concentrated pumping in Sandy.

E. Other Replacement Wells

Table 3 and Figure 2 show various other replacement wells that the District has already constructed, or plans to construct. In many cases, the old well will be retained as an injection well. Its injection/recovery right has been authorized under water right #57-10134 (A70527), which is the recharge and recovery permit previously approved by the State Engineer.

F. JVWCD Remedial Wells

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JVWCD has proposed a contaminated groundwater remediation project jointly with Kennecott Utah Copper Corporation (KUCC). This proposed project has been made to EPA, to the Utah Department of Environmental Quality (UDEQ), and to the State Engineer's office. For remediation purposes, a single District water right is proposed to be distributed to six smaller well locations. This is for purposes of distributing the capture and interception of the contaminated sulfate plume caused largely by KUCC. These six wells, designated as well numbers 42a through 42f, are shown in Figure 2. They are considered by the District to be a single equivalent point of diversion.

G. "Well 43" - Principal Aquifer Inducement

JVWCD has submitted change applications for some of its Utah Lake irrigation stock and Jordan River rights to be diverted through a series of riverbank filtration wells along the Jordan River, and shallow wells located outside of the Jordan River alluvial flood plain area. JVWCD intends to submit additional change applications as it acquires irrigation stock and Jordan River water rights. JVWCD has also submitted a series of applications to appropriate natural recharge water from the shallow aquifer in Salt Lake Valley, with a total proposed diversion of 30,680 acre feet.

At a future date when full build-out of these shallow well projects has been achieved, JVWCD shallow aquifer model simulations indicate that a modest amount of water from the principal aquifer will be induced upward to the shallow well fields. This modest amount of water is estimated from model simulations to reach as high as 3,400 acre feet annually at build-out (when 98,000 acre feet per year is withdrawn through the shallow fields). Therefore, JVWCD has designated this upward inducement as an equivalent point of diversion, and has designated it as "well number 43" in Table 3.

H. Withdrawal of Pending JVWCD Change Applications

The conceptual approval of this proposed groundwater development and water rights allocation plan would allow the District to withdraw the following change applications, some of which are currently pending State Engineer action:

57-10178 (a23007)

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57-7504 (a22573)

57-3016 (a23005)

I. Withdrawal of JVVCD Requests for Reconsideration

Conceptual approval of this groundwater development and water rights allocation plan would allow JVVCD to withdraw the following requests for reconsidering which have been approved by the State Engineer, and which are still pending his reconsideration:

57-3016 (a23005)

57-2511 (a22589)

57-8832 (a22587)

III. SUMMARY

Although the State Engineer is not precluded from modifying conditions placed in earlier memorandum decisions when issuing later memorandum decisions, the foregoing plan would allow the State Engineer to retain the basic intent of the JVVCD 1960 memorandum decision when approving future JVVCD change applications.

Attachments: Tables 1 - 6
 Figures 1 - 3

BEFORE THE STATE ENGINEER OF UTAH

IN THE MATTER OF APPLICATIONS NOS.)
24396, 24398, 25712, 25713, 25714,)
26317, 26318, 26319, 26320, 26321,)
26392, 26433, 26486, 26836, 27078,)
29271, 29272, 29599, 29908, 31134,)
31135, 31136, 31137, 31262, 31263,)
31264, 31265, 31266, 31267, and a-3355)

MEMORANDUM DECISION

As a result of our findings on the projected water needs and sources to 1975 for the Salt Lake County Water Conservancy District and our hearings on November 13, 1959, and again on January 20, 1960, the following action is taken on these applications held and used by said District.

Application No. 25714 is hereby APPROVED subject to the following conditions: "All of the following applications are supplemental to each other to a total limit of 125 cfs as projected to 1975. This includes Applications to Appropriate Nos. 24396, 24398, 25712, 25713, 25714, 26317, 26318, 26319, 26320, 26321, 26392, 26433, 26486, 26836, 27078, 29271, 29272, 29599, 29908, 31134, 31135, 31136, 31137, 31262, 31263, 31264, 31265, 31266, and 31267. Each application is limited to the specific number of wells designated at the time of approval and to the quantity of water and rate of diversion actually developed at each well. The applicant is entitled to divert no more than 125 cfs at any one time under all of the above-numbered applications combined. Any additional water must be obtained through the filing of new applications following a re-evaluation of applicant's needs and sources of supply."

Proof will be due for these applications on or before September 30, 1965.

In accordance with your designation, Application No. a-3355 is hereby REJECTED.

To the extent necessary, attention is directed to Section 73-3-14, Utah Code Annotated, 1953, which provides that any person aggrieved by a decision of the State Engineer may, within sixty days after notice thereof, bring civil action in the district court for a plenary review thereof.

Dated this eleventh day of March, 1960.

Wayne D. Criddle

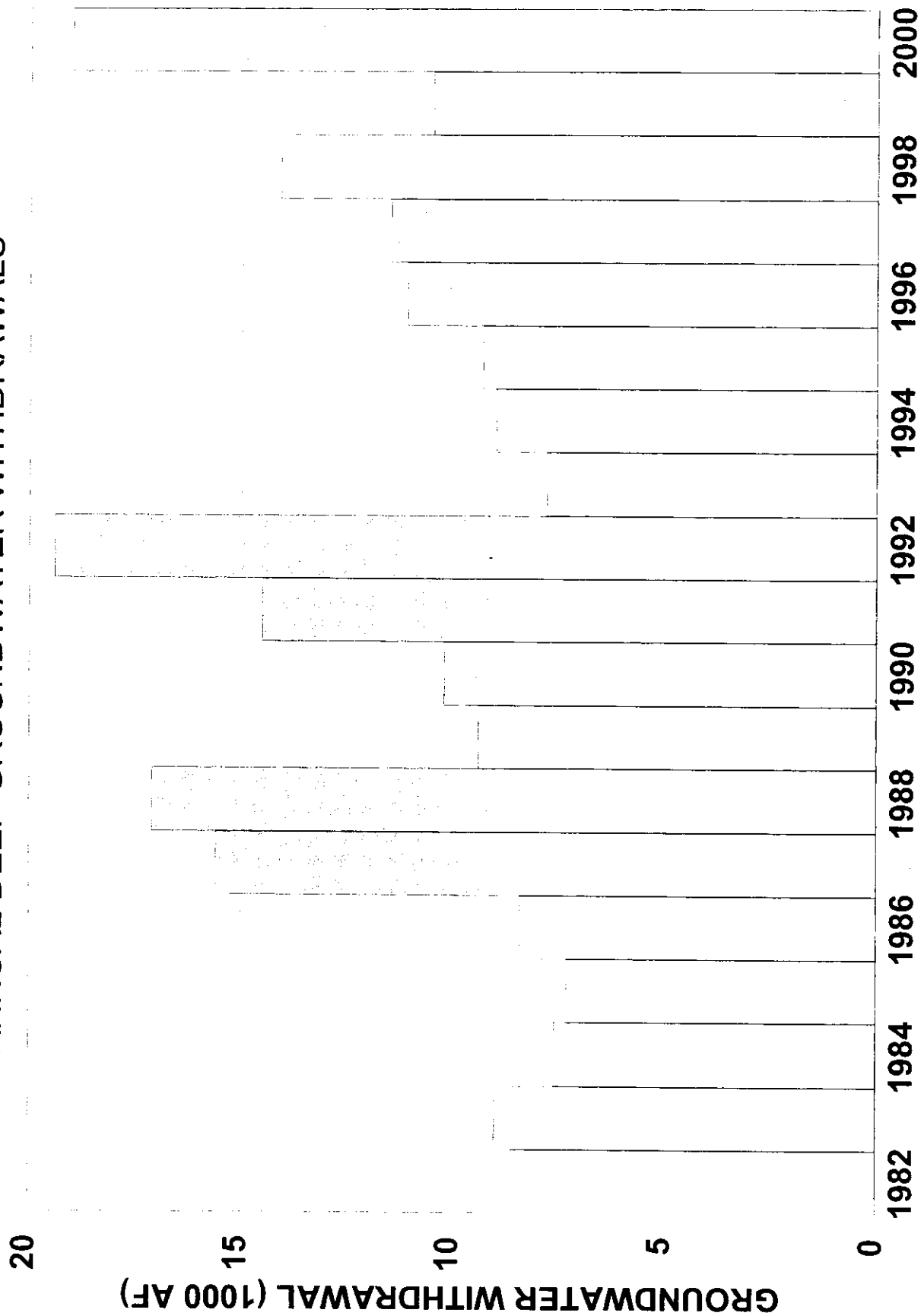
Wayne D. Criddle
State Engineer

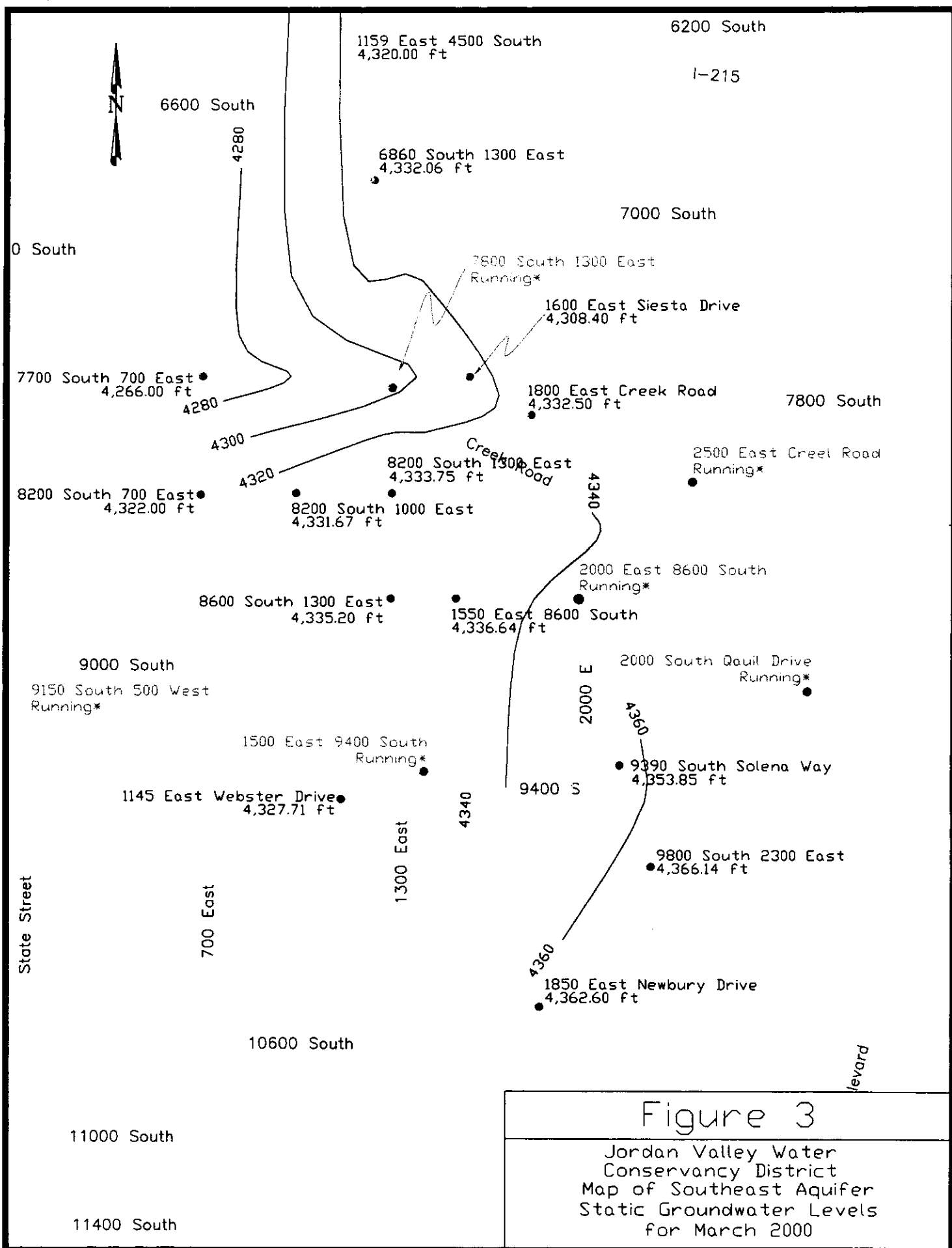
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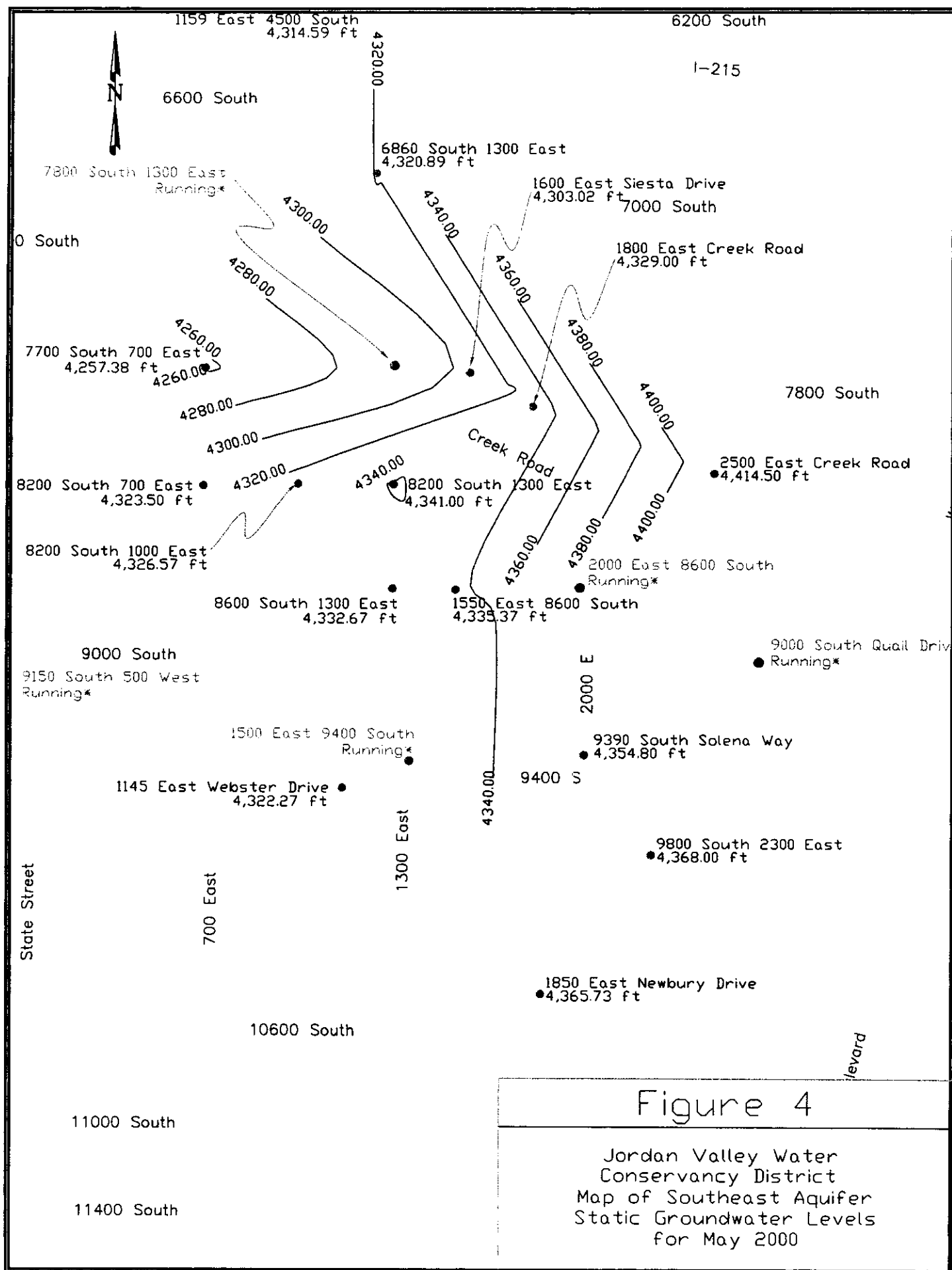
cc: Mr. Win Templeton
Mr. E. W. Clyde

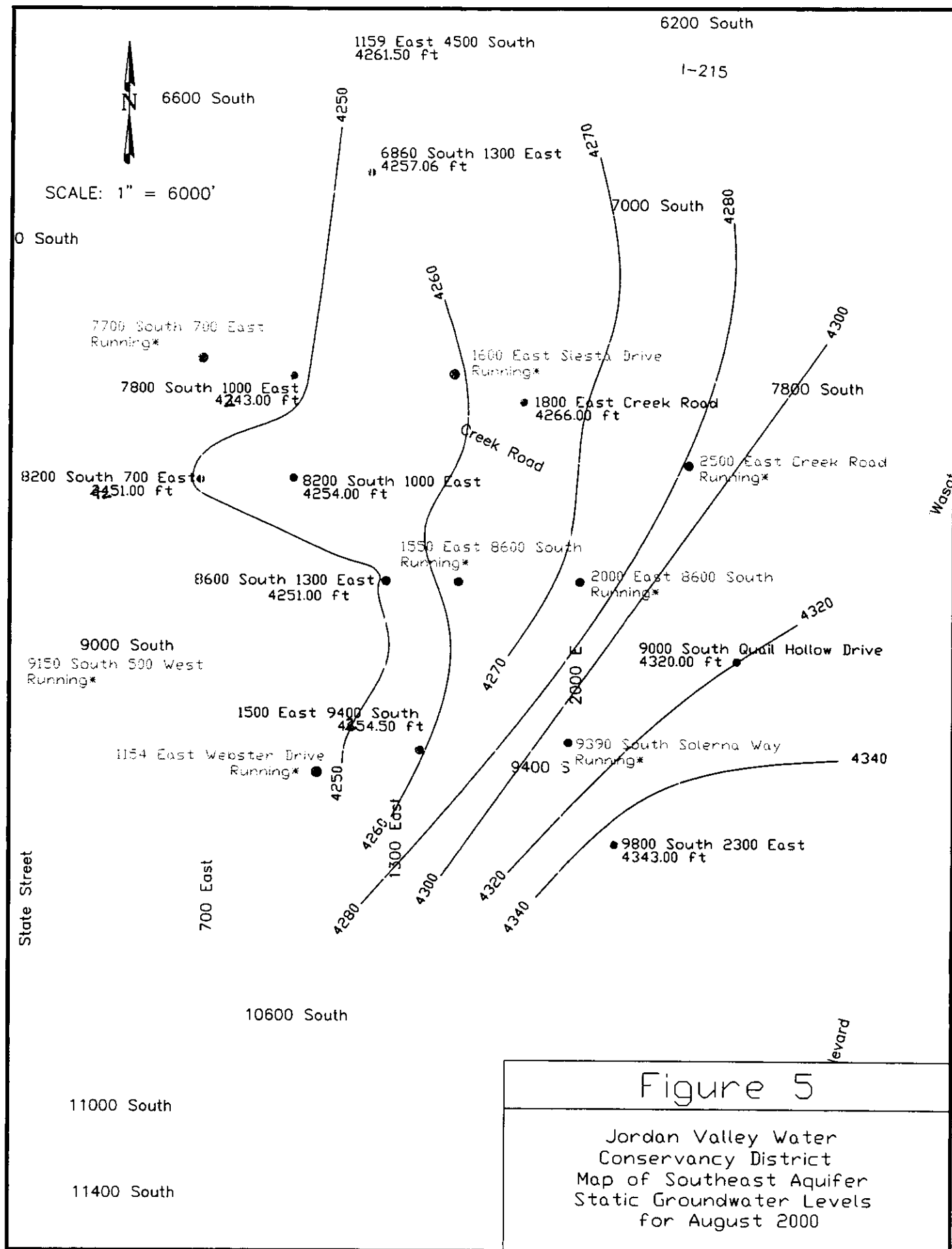
Figure 1

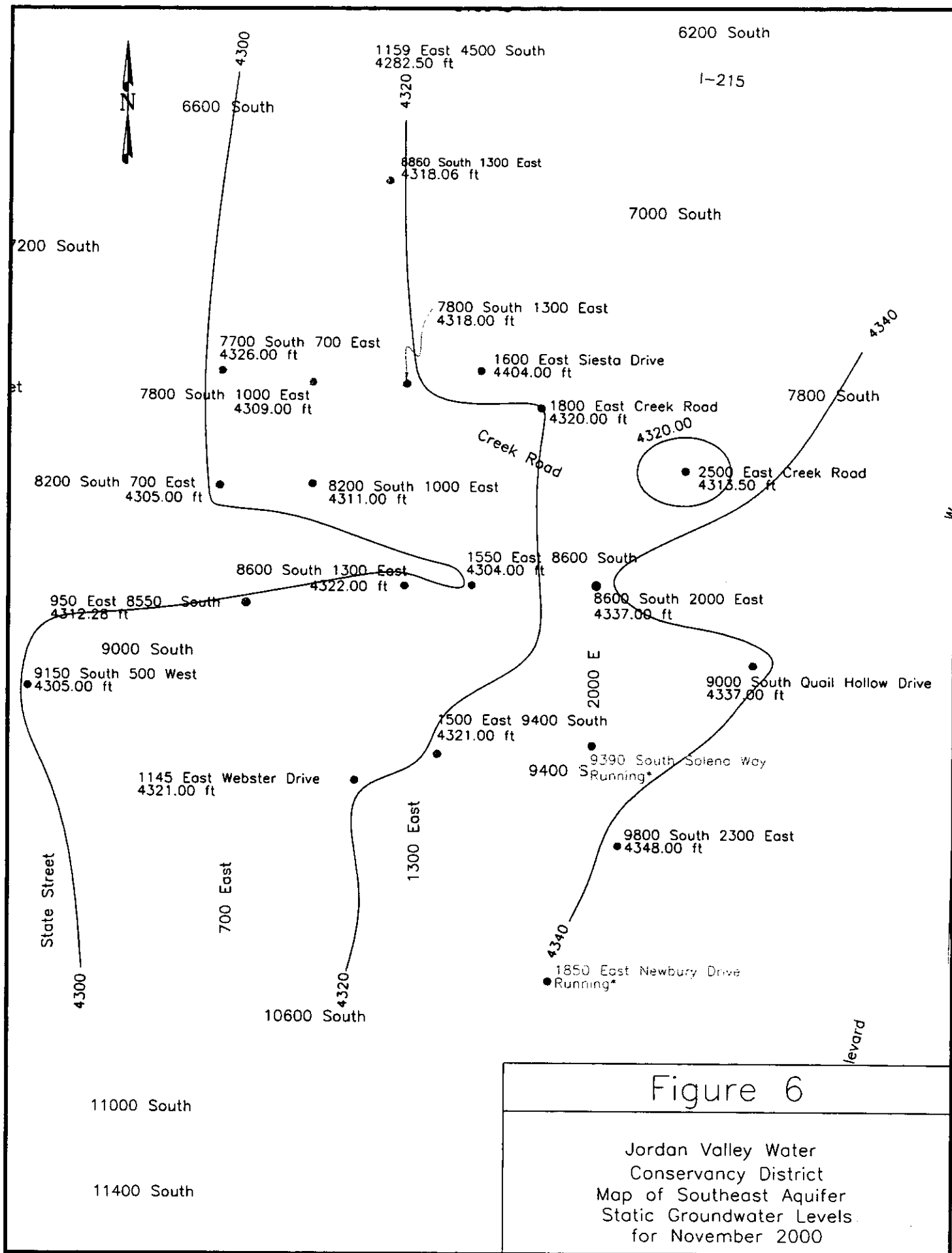
JORDAN VALLEY WATER CONSERVANCY DISTRICT ANNUAL DEEP GROUNDWATER WITHDRAWALS











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Table 1

**Summary of Underground (Principal Aquifer)
Water Rights Approved In March 11, 1960 Memorandum Decision**

DECEMBER 20, 2000

Application Number	Water Right Number	Flow Rate (cfs)	Number of Wells
A24396	57-2230	10	2
A24398	57-2231	10	1
A25712	57-2425	10	1
A25713	57-2426	10	1
A25714	57-2427	10	1
A26317	57-2507	10	1
A26318	57-2508	10	2
A26319	57-2509	10	1
A26320	57-2510	10	1
A26321	57-2511	10	2
A26392	57-2520	10	2
A26433	57-2524	10	1
A26486	57-2528	10	1
A26836	57-2552	10	4
A27078	57-2580	10	1
A29271 (a3519)	57-2793	4	2
A29272 (a3520)	57-2794	4	2
A29599	57-2851	5	1
A29908	57-2893	4	2
A31134	57-3016	14	2
A31135	57-3017	12	2
A31136	57-3018	12	2
A31137	57-3019	12	2
A31262	59-1531	5	1
A31263	59-1532	5	1
A31264	59-1533	5	1
A31265	59-1534	5	1
A31266	59-1535	5	1
A31267	59-1536	5	1
TOTALS		247 cfs ^(a)	43 Wells
Notes: ^(a) Limit of 125 cfs "at any one time" placed on all of these rights.			

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Table 2

**Status of Underground (Principal Aquifer)
Water Rights Approved In March 11, 1960 Memorandum Decision**

FEBRUARY 14, 2001

Original Applications (as of March 11, 1960)				Current Status (December 20, 2000)						
Application Number	Water Right Number	Flow Rate (cfs)	Number of Wells	Number of JWCD Wells			JWCD Rights Transferred to other Municipal Agencies			
				In Orig. Applic's Certificates of Approved Change Applic's	In Pending Change Applic's	Constructed Wells	No. of Wells in Approved Change Applic's	Transferred Right (cfs)	Certificated Wells	Certificated Rights (cfs)
A24396	57-2230	10	2	1		1	1	1.3 ^(d)	1	1.25
A24398	57-2231	10	1	1		1		5.0 ^(e)	2	5.0 ^(e)
A25712	57-2425	10	1	1 ^(b)		1				
A25713	57-2426	10	1	1		1				
A25714	57-2427	10	1	2		1				
A26317	57-2507	10	1	1		1				
A26318	57-2508	10	2	1		2				
A26319	57-2509	10	1	0	1	0				
A26320	57-2510	10	1	2		2				
A26321	57-2511	10	2	2		0				
A26392	57-2520	10	2	1	(c)	1				
A26433	57-2524	10	1	2	(c)	2				

Original Applications (as of March 11, 1960)					Current Status (December 20, 2000)					
Application Number	Water Right Number	Flow Rate (cfs)	Number of Wells	Number of JVWCD Wells			JVWCD Rights Transferred to other Municipal Agencies			
				In Orig. Applic's Certificates of Approved Change Applic's	In Pending Change Applic's	Constructed Wells	No. of Wells in Approved Change Applic's	Transferred Right (cfs)	Certificated Wells	Certificated Rights (cfs)
A26486	57-2528	10	1	1		1				
A26836	57-2552	10	4	4		1				
A27078	57-2580	10	1	2		0				
A29271 (a3519)	57-2793	4	2	2		1				
A29272 (a3520)	57-2794	4	2	2		1				
A29599	57-2851	5	1	1		0		3.08 ^(f)	1	3.08 ^(f)
A29908	57-2893	4	2	1		1				
A31134	57-3016	14	2	2	1 ^(h)	1				
A31135	57-3017	12	2	3		3				
A31136	57-3018	12	2	2		2				
A31137	57-3019	12	2	2		3				
A31262	59-1531	5	1	1		0				
A31263	59-1532	5	1	1		0				
A31264	59-1533	5	1				4	5.0 ^(g)		
A31265	59-1534	5	1					5.0 ^(g)	4	5.0 ^(g)
A31266	59-1535	5	1	1		0				
A31267	59-1536	5	1	1		0				
TOTALS		247 cfs ^(a)	43 wells	41		27	5	19.38	8	14.33

Original Applications (as of March 11, 1960)				Current Status (December 20, 2000)					
Application Number	Water Right Number	Flow Rate (cfs)	Number of Wells	Number of JWCD Wells			JWCD Rights Transferred to other Municipal Agencies		
				In Orig. Applic's Certificates of Approved Change Applic's	In Pending Change Applic's	Constructed Wells	No. of Wells in Approved Change Applic's	Transferred Right (cfs)	Certificated Wells
Notes:									
(a)	Limit of 125 cfs "at any one time" placed on all of these rights.								
(b)	Segregated portion (5) of this right is/are approved for other well site(s) which is/are listed under other mother rights.								
(c)	This change application includes one or more supplemental points of diversion that are approved under another mother right application herein, and therefore are not shown here.								
(d)	Transferred to Murray City.								
(e)	Transferred to White City Water Company.								
(f)	Transferred to Granger Hunter improvement District.								
(g)	Transferred to Riverton City.								
(h)	An approved Request for Reconsideration is pending reconsideration.								